



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,794	05/05/2006	Alexander E. Dudelzak	1190/97378	8726
24628	7590	11/13/2008		
Husch Blackwell Sanders, LLP			EXAMINER	
Welsh & Katz			HANSEN, JONATHAN M	
120 S RIVERSIDE PLAZA				
22ND FLOOR			ART UNIT	
CHICAGO, IL 60606			PAPER NUMBER	
			2886	
			MAIL DATE	
			DELIVERY MODE	
			11/13/2008	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/578,794

Applicant(s)

DUDELZAK ET AL.

Examiner

JONATHAN M. HANSEN

Art Unit

2886

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 10/06/2008
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims **1-9, 11, 12 and 14-16** are rejected under 35 U.S.C. 102(e) as being anticipated by **US Patent 6,549,285 to Wright et al.**

In regards to claims **1 and 20**, Wright discloses and shows in Figure 1 below, an apparatus and method for non-contact detection, of a substance in a target region, comprising:

a laser source (40) for generation of a probing light emission (col. 6, ll. 18-26);

an optical subsystem (2, 3, 8 and 9) adapted to split a light emission into first and second emission components and to introduce a first delay to the second emission component relative to the corresponding first emission component (col. 9, ll. 27-43);

a means for focusing (13) (applicant's lens subsystem) adapted to accept all of the components in sequence and direct them to a focal region proximate to the target region along an optical axis (col. 9, ll. 47-50);

an excitation source (col. 6, ll. 27-31) adapted to direct energy at a wavelength corresponding to an absorption line in the spectrum of the substance, through the lens subsystem

to the focal region, at a time between the first and second components so as to change the refractive index in the focal region if the substance is present in the target region before the passage of the second component through the focal region (col. 10, ll. 21-44);

an emission coupler adapted to:

recover back-scattered returns of the emission components, introduce a second delay to the first returned emission component relative to the second returned emission component in an amount equal to the first delay, and coherently couple the emission components into a returned light emission (col. 9, ll. 44-68); and

a detection subsystem (21, 34 and 42-44) adapted to measure components of the returned emission to determine if there has been a change in the phase of the second returned emission component as a result of the presence of the substance in the target region (col. 12).

In regards to claims **2 and 3**, Wright discloses an apparatus, wherein the first and second emission components have linear polarizations orthogonal to each other (col. 9, ll. 29-33).

In regards to claim **4**, Wright discloses an apparatus, wherein the optical subsystem comprises a plurality of polarizing beam splitters (2 and 3) (applicant's polarizers) adapted to transmit the first emission component directly there between (10) but to reflect the second emission component along a diverted optical path there between (7) having an additional length that corresponds to the amount of the first delay (col. 9, ll. 29-43).

In regards to claim 5, Wright discloses an apparatus, wherein the emission coupler is adapted to alter the polarization of the first and second recovered emission components so that they correspond to the polarization of the second and first emission components respectively and thereafter to return them through the optical subsystem to provide the second delay and to coherently couple the resulting emission components (col. 9, ll. 44-68).

In regards to claim 6, Wright discloses an apparatus, wherein the emission coupler comprises a Faraday rotator (53 or 47) adapted to rotate the linear polarization of the emission components by +45 degrees before passing through the lens subsystem and to rotate the linear polarization of the recovered emission components by an additional +45 degrees (col. 13, ll. 57-col. 14, ll. 12).

In regards to claim 7, Wright discloses an apparatus, wherein the detection subsystem comprises a detector of linearly polarized emission components of the returned emission (col. 10, ll. 1-20).

In regards to claim 8, Wright discloses an apparatus, wherein the detector comprises a photodiode (21).

In regards to claim 9, Wright discloses an apparatus, wherein the lens subsystem comprises a dichroic mirror (29) adapted to transmit the first and second emission components

there through and to reflect the energy at a time between the first and second emission components along the optical axis.

In regards to claim **11**, Wright discloses an apparatus, wherein the lens subsystem comprises an objective lens (13) to focus the beam in the focal region (col. 9, ll. 49).

In regards to claim **12**, Wright discloses an apparatus, wherein the excitation source is a laser (col. 6, ll. 18-31).

In regards to claim **14**, Wright discloses an apparatus, wherein the probing emission is emitted in the form of a probing pulse (col. 6, ll. 18-31).

In regards to claim **15**, Wright discloses an apparatus, wherein the laser source emits a reference pulse before the probing pulse (col. 6, ll. 18-31).

In regards to claim **16**, Wright discloses an apparatus, wherein the detection subsystem determines the presence of the substance in the target region by comparing the ratio of the amplitudes of orthogonally polarized components of a returned emission corresponding to the reference pulse with the ratio of the amplitudes of orthogonally polarized components of a returned emission corresponding to the probing pulse to detect a change in the phase of the second returned emission component corresponding to the probing pulse (col. 10, ll. 58- col. 11, ll. 23).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Wright**.

In regards to claim 10, Wright differs from the limitations in that he does not explicitly disclose an apparatus, wherein the lens subsystem comprises a telescope lens assembly to increase the beam diameter.

However, beam expanders and telescope lenses to increase a beam diameter are well-known to those of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to modify Wright to include a telescope lens to increase a beam diameter for the advantage of increasing the beam diameter from a diffraction limited spot size.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Wright**, in view of US Patent 5,619,326 to Takamatsu et al.

In regards to claim 13, Wright differs from the limitations in that he does not explicitly disclose an apparatus, wherein the excitation source is tunable to a wavelength corresponding to an absorption spectrum line of the substance.

However, Takamatsu teaches a sample evaluation apparatus that utilizes a tunable excitation source (18) for the advantage of allowing the excitation wavelength to be varied (col. 7, ll. 62- col. 8, ll. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wright to include a tunable excitation source for the advantage of allowing the excitation wavelength to be varied.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wright**, in view of US Patent 2001/0045529 to Iketaki et al.

In regards to claim 17, Wright differs from the limitations in that he does not explicitly disclose an apparatus, wherein the laser emits the light emission as a continuous wave.

However, Iketaki teaches an evaluation apparatus that utilizes a continuous oscillation light source (par. 637 and 638) for the advantage of providing evaluation in real time.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wright to include a continuous wave laser source for the advantage of providing evaluation in real time, as taught by Iketaki.

In regards to claims **18 and 19**, Wright differs from the limitations in that he does not explicitly disclose an apparatus, wherein the detection subsystem is adapted to detect transients in the returned emission.

However, Iketaki teaches an evaluation apparatus that utilizes the detection of scattered Raman transients (par. 580-609) for the advantage of providing enhanced resolution.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wright to include the detection of transients for the advantage of improving resolution, as taught by Iketaki.

Conclusion

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice in this Office Action mailed. The applicant must seasonably challenge well known statements and statements based on personal knowledge. See MPEP 2144.03; In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942); and In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971).

A challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice. To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art, a general allegation that the claims define a patentable invention being inadequate.

A seasonable challenge constitutes a challenge made as soon as practicable during prosecution. Thus, the applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well-known statement was made. If the applicant does not seasonably traverse the well-known statement during examination, then the object of the well-known statement is taken to be admitted prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. HANSEN whose telephone number is (571)270-1736. The examiner can normally be reached on Monday through Friday 9:30AM to 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH 11/06/2008
/TARIFUR R CHOWDHURY/
Supervisory Patent Examiner, Art Unit 2886